

(GOSS NET 1)

Tape 63
Page 11

Jim and Frank when you get a chance.

03 23 23 49

CMP

Both Frank and myself had a meal before bed
last night, and I believe that we had about
20 clicks of water, and a good night's rest.
Just getting up.

02 23 24 04

CC

Roger, Jim. Thank you.

END OF TAPE

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

Tape 64
Page 1

03 23 29 01	CDR	Jerry, this is Frank. Do you have any later word on our trajectory and how the charging looks?
03 23 29 08	CC	Roger. Stand by, Frank, and we'll give you an update.
03 23 30 07	CC	Apollo 8, Houston. We are looking at a midcourse correction at 104 hours of about 5 feet per second. The tracking is real good. We got you in the center of the corridor and on target.
03 23 30 24	CDR	Understand; 5 feet per second at 104 hours.
03 23 30 27	CC	That's affirm.
03 23 30 50	CC	Frank, did you get the word that we deleted the P52 at 96?
03 23 30 57	CDR	Roger. Do you mind if we go ahead and do it now?
03 23 31 02	CC	Negative; we've deleted it. Your drift rates are small that you don't even need to unless you want to do it.
03 23 31 13	CDR	Okay. We won't.
03 23 31 14	CC	Roger.
03 23 37 19	CC	Apollo 8, Houston.
03 23 37 24	CDR	Go ahead, Houston.
03 23 37 26	CC	Roger, Frank. In 3 minutes, we are handing the control from Honeysuckle over to Madrid. Over.
03 23 37 34	CDR	Thank you.
03 23 37 36	CC	Roger.
03 23 41 46	CC	Apollo 8, Houston. Buenos dias from Madrid.
03 23 41 53	CDR	... reading ... now.

(GOSS NET 1)

Tape 64
Page 2

03 23 42 00 CC Apollo 8, Houston. Reading you loud and very noisy.

03 23 43 47 CDR Houston, Apollo 8. How do you read?

03 23 43 49 CC Apollo 8, Houston. You're loud and clear. How me?

03 23 43 54 CDR You are loud and clear now.

03 23 45 05 CDR Hey, Jerry, this is Frank. Do you read me?

03 23 45 07 CC Roger, Frank.

03 23 45 11 CDR Okay. I wasn't sure we were lined up. Thank you. Enough ...

03 23 51 37 CC Apollo 8, Houston. If you don't need the computer, we would like to have you call up VERB 64 ENTER so that we can do the B-D antenna switching from the ground. Over.

03 23 52 17 CC Apollo 8, Houston.

03 23 52 22 CMP Go ahead.

03 23 52 24 CC Jim, if you don't need the computer, would you call up VERB 64 ENTER, and we will take care of the antenna B-D switching down here. Over.

03 23 52 36 CMP Roger.

03 23 52 37 CDR We just did an automatic maneuver and then get on back to PTC attitude.

03 23 52 42 CC Roger.

04 00 26 15 CC Apollo 8, this is Houston. All your systems looking good. Over.

04 00 26 22 CDR Thank you, Houston. Apollo 8.

37 min
gap

(GOSS NET 1)

Tape 64
Page 3

04 00 26 24

CC

Roger, Frank. I got some more newspaper if you would like to hear it.

04 00 26 31

CDR

We would enjoy it.

04 00 26 32

CC

Roger. We will start out with the world news.

On page 1 of the Houston Post: praise for America's Apollo 8 astronauts and hopes for international cooperation in space exploration with the world-wide Christmas Eve messages as the tiny spaceship orbited the moon. Even in the Communist world, there was enthusiasm for man's first voyage to the moon. In Moscow, Soviet scientist Anatoly Besaranov recalled his country and the United States had shared space knowledge before and predicted the Apollo 8 flight would lead to more cooperation. In Cuba, Radio Havana re-broadcast the Voice of America program to tell its listeners of the Apollo 8 speech. Voice officials said it was the first time that any of the U.S. agencies' programs had been carried by Havana radio. (Czechoslovakia saw the moon flight through extensive television coverage; and in Budapest, Hungary, people talk of little else on the trains and buses. In the non-Communist world, office workers and Christmas shoppers held their breath as the spacecraft was readied for the blast toward earth. Frenchmen in the street praised American knowhow and the space feat, and some viewers watch television lunar

(GOSS NET 1)

Tape 64

Page 4

photos cheer "Magnifique!". In London, swarms of Christmas shoppers crowded into shops and pubs to watch television photographs of the moon's craters. Britain's foremost space astronomer, Bernard Lovell, who until a few weeks ago criticized the Apollo 8 project on the grounds that instruments could do the job without risking the astronauts' lives, made it clear that he was deeply impressed by the moon flight.

Pope Paul VI said honor to those pioneers of the extension of man's intellect and activity. There were only a few scrooges that "pooh pooh-ed" the Christmas voyage, however. The most notable was Samuel Shenton, secretary of London's Flat Earth Society, who said the public are being balihooed, taken for a ride. How does that grab you, Frank?

04 00 29 00

CDR

It doesn't look too flat from here, but I don't know; maybe something is wrong with our vision.

04 00 29 07

CC

Roger. Elsewhere in the world news, the Pueblo crew landed at NAS Miramar yesterday afternoon at 14:00, and they will spend a few days there in Balboa Hospital with their families celebrating Christmas. On the local scene here, the Retail Merchants' Association has announced that its Christmas gift exchange policy is going to be the same this year as it was last year; that is, very liberal. Fellows, we will be glad

(GOSS NET 1)

Tape 64
Page 5

to replace any broken items that you might bring back, too; but, sorry, there won't be any cash refunds.

04 00 30 54 CDR

Okay.

04 00 30 57 CC

Another little bit of local news: the County Court House at Huntsville burned down before dawn yesterday, so it looks like they will go in the construction business there again. On the feature page: got a little bit about the waiting families. This one is by Ann James, Post reporter. "We rest on the backside of the moon," said Valerie Anders on Christmas Eve, as she and her family waited for Apollo 8 to get out of the moon orbit and head back toward home. Mrs. Anders had been up since 2:00 a.m. Tuesday, and neighbors had just collected all the youngsters so the family could get some rest while the spacecraft was behind the moon and out of communication. Colonel Frank Borman's home was decorated with four big evergreen wreaths outdoors and sprinkled with powdery snow and decorated with red bows. A tree in the den awaits his safe return, and his pretty blond wife Sue and husky sons, Frederick and Edwin, plan to stay home for the midnight blast out of moon orbit. Ordinarily, they would attend midnight services at St. Christopher's Episcopal Church. The plans were for the family

(GOSS NET 1)

Tape 64
Page 6

to go to Christmas Day service at 7:00 a.m. Since there are no young children in the Borman home, family Christmas gift giving will simply wait until Colonel Borman comes back with his fantastic holiday gift of the flight to the moon and back. Marilyn Lovell's four youngsters will have an absolutely normal Christmas as far as the kids are concerned, the busy wife of Captain Lovell reported; but talking about presents was out because two of them were sitting right there next to her. "I haven't even had time to change my clothes that I wore last night," Mrs. Lovell said. Adult-to-adult gifts, however, and the Christmas tree will still be right there when Lovell comes home. Here is a good one on the Action Line. There is a little letter to the Action editor. It says, "We intended to pay you Earthlings a surprise visit by a flying saucer last night. We got scared off by some crazy antics of a fat man and a sleigh and three guys in a rocket-powered bucket drag racing around the moon. Is that anyway to run a planet?" Signed the boys from Mars. Frank, it looks like the only people around here who aren't impressed by the Apollo 8 is the stock market. Its 30 industrials are down 1.43.

04 00 32 43

CDR

Neil will be crying.

Amintony

(GOSS NET 1)

Tape 64
Page 7

04 00 32 45

CC

(Laughter) You bet. On the sports page, not too much activity. UCLA is tops in both basketball polls. If you got any particular one you want to ask about, let me know, and I'll tell you if they are in the top ten on either poll. As far as the North - the college All Star game that is going to be played tomorrow is concerned, the North is a slight favorite over the South. Ara Parsegian is the coach of the North team, and he's got six of the Notre Dame troops working for him, so they ought to be pretty tough. The coach of the South team is Frank Howard of Clemson. He says it ain't easy, he quips, to build a team in 4 days to play Notre Dame. Another little item of interest in the sports page is Woody Hayes from Ohio State was named Coach of the Year by the Football Writers' Association. Well, that's about it. Any questions?

04 00 33 49

CDR

No. Thank you very much, Jerry.

04 00 33 51

CC

Okay, Frank.

04 00 33 52

CMP

Jerry, you can do this every Sunday.

04 00 33 56

CC

Do you want me to read you the funnies?

04 00 34 02

CMP

No, thanks.

04 00 34 17

CC

Hey, Frank, did you get the word that Fred made all-district football team?

04 00 34 26

CDR

Yes, thank you. I heard about that before - before the lift-off.

(GOSS NET 1)

Tape 64
Page 8

04 00 34 30 CC Yes. I thought you heard about that. Now, back to the workday; we need a cryo fan cycle from you.

04 00 34 43 CDR We're starting right now.

04 00 34 44 CC Roger.

04 00 35 17 CMP Houston, Apollo 8.

04 00 35 21 CC Apollo 8, Houston. Go.

04 00 35 25 CMP Jerry, in a little while, I would like to try out a little P37 exercise based on minus MA. I'll just run one through, and maybe we can get a solution from the ground and see how they compare.

04 00 35 38 CC Okay, Jim.

04 00 35 55 CC Retro says they are ready to copy.

04 00 36 02 CMP Roger.

04 00 36 11 CDR That performance at LOI was absolutely fantastic. You all really hit it on the money; I just couldn't believe it.

04 00 36 26 CC Roger. That kinda surprised us, too.

04 00 36 32 CDR Uh-uh. I hope you're not getting close to the earth. We got another corridor to hit, you know.

04 00 36 39 CC We haven't quit yet.

04 00 36 45 CDR Okay.

04 00 42 25 CMP Houston, Apollo 8.

04 00 42 30 CC Apollo 8, Houston. Go.

04 00 42 35 CMP We'd like to use the computer now if you don't need it now. ...

04 00 42 40 CC Roger, Jim. It's yours.

04 00 42 45 CMP Thank you.

(GOSS NET 1)

Tape 64
Page 9

04 00 42 46 CDR If you can switch it down there without VERB 64,
well, go ahead and do it.

04 00 42 56 CC We'll give it a whirl, Frank.

04 00 43 01 CDR Okay.

04 00 43 58 CDR ... are all ... of the earth.

04 00 44 03 CC Roger. Thank you, Frank.

04 00 46 42 CDR Houston. ... pitch and yaw of 10 and 45, aren't
you?

04 00 46 57 CC That's affirmative, Frank. Pitch 10, yaw 45.

04 00 53 29 CC Apollo 8, this is Houston with a battery status
report.

04 00 53 36 CDR Go ahead. We were just talking about the batteries.

04 00 53 39 CC Roger. At 96 hours EEP, battery A has 38.95 amp-
hours; battery B has 36.35 amp-hours; battery C has
38.46 amp-hours. Your total, 113.76 amp-hours. At
97 plus 50, battery A will be fully charged and will
have 40 amp-hours, and you can terminate charge at
that time. Over.

04 00 54 15 CDR At 97:50.

04 00 54 17 CC Roger.

04 01 02 12 CMP We'll give you back VERB 64, Houston..

04 01 02 39 CC Apollo 8, Houston. Say again.

END OF TAPE

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

Tape 65
Page 1

04 01 02 45	CMP	We gave you back VERB 64. I wonder if you could have Guidance figure out a corridor correction at 114 hours for us with a minus 648 cabin.
04 01 03 03	CC	Okay, Jim. We copy, and now we see we've got VERB 64 back. We'll be back with you in a minute.
04 01 03 12	CMP	Roger.
04 01 29 08	CC	Apollo 8, Houston. Over.
04 01 29 13	CMP	Go ahead, Houston.
04 01 29 15	CC	Roger. We have a comparison now on your P37.
04 01 29 24	CMP	Roger.
04 01 29 26	CC	Okay. Based on your vector, the CMC vector, the ground computes 15.3 feet per second on the midcourse, VEI of 36221, a gamma EI of minus 6.51 so it looks like your P37 program is pretty good. Applying your P37 solution to our MSFN vector, however, we get a gamma EI of minus 10.32. We expect these two solutions to converge with a little more tracking and after you get some earth horizon sightings. Over.
04 01 30 11	CMP	Roger. How valuable do you think that the lunar we did just after TPIR as compared to your MSFN tracking? Go ahead, Houston.
04 01 30 46	CC	Apollo 8, Houston. Repeat your question, please.

(GOSS NET 1)

Tape 65

Page 2

04 01 30 52 CMP Roger. I was getting curious of the value of onboard tracking in the P23 course close to the moon, in regards to the MSFN tracking that close to the moon. I think there might be a trail-off for onboard navigation, and I think it might be a little bit better than MSFN tracking.

04 01 31 20 CC Roger. Stand by.

04 01 33 00 CC Apollo 8, Houston.

04 01 33 04 CMP Go ahead.

04 01 33 06 CC Roger. I guess the experts would say that the MSFN data was probably best based on the number of sightings that you have taken. However, that's going to be the subject of quite a bit of evaluation, I think, after the mission. Over.

04 01 33 24 CMP ...

04 01 33 27 CC Roger, Jim. Be advised that we are beginning to read you very weak, and with a rather loud background noise.

04 01 33 38 CMP Understand. ...

04 01 33 59 CC Apollo 8, Houston. How do you read now?

04 01 54 04 CMP I'm reading - I'm reading you loud and clear.

04 01 54 06 CC Roger. Still reading you weak but clearer.

04 01 54 55 CC Apollo 8, Houston. You can turn off the battery charger. Over.

04 01 55 02 CMP Roger. Will do.

(GOSS NET 1)

Tape 65
Page 3

04 02 04 22 CC Apollo 8, Houston.

04 02 04 27 CMP Go ahead, Houston.

04 02 04 29 CC Roger. Is this Jim?

04 02 04 34 CMP Roger.

04 02 04 36 CC Roger, Jim. Christmas morning around your house was kinda quiet, says Marilyn. She said that they are all thankful the mission has gone so great. They missed having you around the tree this morning, but they wanted to reassure you that your presents are waiting, and the roast beef and Yorkshire pudding will be on the table when you get home.

04 02 04 58 CMP Hey, that sounds good, Jerry - good old roast beef and Yorkshire pudding. 3-9

04 02 05 02 CC Yeah, man. Is Frank listening?

04 02 05 04 CMP Say hello to them for me, will you?

04 02 05 05 CC Sure will. Is Frank listening?

04 02 05 06 CMP Frank's not on the line yet; he will be shortly.

04 02 05 12 CC Okay. How about Bill? Is he still asleep?

04 02 05 18 CMP Bill is still asleep.

04 02 05 20 CC Okay. Have Frank give me a holler when he is ready. I've got a message for him, too.

04 02 05 28 CMP Okay. Sounds good. How is your Christmas, Jerry?

04 02 05 31 CC Real good, Jim. Santa Claus struck last night before I came in here on the shift, and I guess

(GOSS NET 1)

Tape 65
Page 4

we will finish off the unwrapping this morning
when I get back.

04 02 05 45 CMP Right. He was looking for a chimney on 103 here,
but he didn't see any.

04 02 05 50 CC (Laughter) You could have left the hatch unlocked
for him.

04 02 06 08 CMP I'll think about that one.

04 02 06 10 CC Think real hard, Jim. EECOM says he could
have slid down the steam duct.

04 02 06 37 CMP Sounds good. About that time, Bill would have
been boiling water.

04 02 06 53 CDR Hey, Jerry, this is Frank. What's up?

04 02 06 55 CC Hi, Frank. Christmas morning has come at the
Borman house. And the boys and Susan and
your Mom and Dad all send their love. They
say for you to stay in there and pitch. Over.

04 02 07 11 CDR Okay. Thank you. Please reciprocate for me.

04 02 07 16 CC Sure will, Frank.

04 02 07 27 CC Frank, when Bill wakes up, give me a holler.
I've got a message for him, too.

04 02 07 35 CDR Okay.

04 02 15 23 CMP Houston, Apollo 8.

04 02 15 26 CC Apollo 8, Houston. Go.

04 02 15 31 CMP Roger. Are the Guidance boys busy this
morning?

(GOSS NET 1)

Tape 65
Page 5

04 02 15 41 CC

They say they are.

04 02 15 49 CMP

I just worked out an answer to move my landing longitude 6 degrees east. I just want to compare with what they've got based on the same burn time of 114 hours, based on the bias impact longitude determined from the P37 which is wrong. I've indicated that I need 600 foot per second DELTA- V_c burn plus, and my DELTA- V_x changes from a minus 11.6 feet per second. I'd like to have them verify that if I could.

04 02 16 29 CC

Roger Jim. Stand by, and I'll see if they copied all that.

04 02 17 30 CC

Apollo 8, Houston.

04 02 17 34 CMP

Go ahead.

04 02 17 35 CC

The voice isn't too great right now, and the Guidance troops didn't get all of that. How about waiting about 2 or 3 minutes? We'll swap OMNI antennas, and then we should get good voice transmission from you and then repeat it. Would you, please?

04 02 17 54 CMP

Roger.

04 02 17 55 CC

Okay.

04 02 22 55 CC

Apollo 8, Houston. How do you read? Over.

04 02 23 00 CDR

Loud and clear.

04 02 23 01 CC

Roger. We're reading you much better now.

Jim can go ahead with his transmission to the

(GOSS NET 1)

Tape 65
Page 6

guidance troops. They have one question before he starts. They would like to know what his GERU was at TIG, 114 hours. Over.

04 02 23 21 CDR Roger. Wait one. The GERU at TIG was plus 07972.

04 02 23 35 CC Roger. Plus 07972.

04 02 25 07 CC Apollo 8, this is Houston. We are ready to copy your data. Over.

04 02 25 14 CMP Okay, Houston. Based on the P37 with minus MA solution, I got an impact longitude of minus 160.95. I biased it to get an impact latitude - longitude of 163.75. I wanted to change my impact point 30 degrees to the east, and I tried to determine what my P30 burn parameters would be to do this, and I got a DELTA- V_X burn of minus 11.6 and a DELTA- V_C of plus 600, DELTA- V_Y of zero. Now that changed my previous DELTA- V_X burn from minus 50.2. I just want to know whether that meets with their approval.

04 02 26 15 CC Roger, Jim. We copy and will run it through the mill and give you an answer.

04 02 26 23 CMP Roger.

END OF TAPE

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

Tape 66
Page 1

04 02 49 35 CC Apollo 8, Houston.

04 02 49 40 CDR Go ahead, Houston. Apollo 8.

04 02 49 42 CC Apollo 8, this is Houston with a flight plan update.

04 02 49 48 CDR Go ahead.

04 02 49 50 CC Roger. At 100 hours 30 minutes, change star number 02 from one set to two set. Over.

04 02 50 05 CDR Roger. Star 02 from one set to two set.

04 02 50 08 CC Roger. Also, set number 2, set number 2, change star number 11 to star number 7. Over.

04 02 50 21 CDR Roger. Eleven to 7.

04 02 50 23 CC Roger. Then after star set number 3, initiate PTC again; pitch 10, yaw 45. Over.

04 02 50 36 CDR Pitch 10, yaw 45.

04 02 50 38 CC Roger. Then at 101 hours 30 minutes, delete the earth horizon settings. Over.

04 02 50 53 CDR 101:30, delete the earth horizons sightings.

04 02 50 57 CC That's affirmative. The folks here are evaluating the thermal situation. Looks like you will be out of PTC rather at an extended period of time. That's the reason we have you initiating PTC again there around 101 as soon as you finish those three star sightings. We are still working on the - about the next 10 hours after 100 hours. We are looking at the thermal situation, and the star sighting situation, and we will be giving you more updates later on. Over.

(GOSS NET 1)

Tape 66
Page 2

04 02 51 32 CDR Roger. We don't have a thermal problem at all now, do we? All our indications here are normal in here.

04 02 51 40 CC Roger. Everything looks okay. I think they're just kinda trying to look down the track aways.

04 02 51 47 CDR I'm all for keeping it that way.

04 02 51 50 CC Roger.

04 02 51 53 CDR We deleted them.

04 02 51 55 CC Okay.

04 02 56 53 CC Apollo 8, Houston.

04 02 56 59 CDR Go ahead, Houston.

04 02 57 30 CC Roger. Frank, I would like to talk to you for a minute or two about the AUTO OPTICS funnies that you have been seeing throughout the mission. Over.

04 02 57 11 CMP Go ahead.

04 02 57 13 CC Roger. The problems you have run into so far are due to some unknown source, probably EMI or the like loading your CMC trunnion cell which is now 91, so it doesn't really represent your true trunnion angle. Now this loading problem we don't feel implies any decrease in the reliability in your CMC at all. We think that the best way to circumvent the problem is to cycle the OPTICS ZERO switch first to OFF and then ON prior to using the optics for any purpose. And with that procedure, I think you probably won't have any more problems. Over.

(GOSS NET 1)

Tape 66
Page 3

04 02 58 01

CMP

Roger, Jerry. Understand. I do notice one difference. We did preferred REFSMMAT's. The first we had trouble with; the last one worked out as expected. I noticed for the first one that when the option came up, it was for nominal option, whereas for the very same procedure for this last REFSMMAT change, we got ... preferred REFSMMAT option. ...

04 02 58 27

CC

Roger, Jim. Copy.

04 03 00 56

CC

Apollo 8, this is Houston with a comeback on your entry navigation calculations. Over.

04 03 01 05

CDR

Go ahead.

04 03 01 07

CC

Roger. We went through the charts and got exactly the same answer as you got. Looks like your procedure is very good; looks like it was real good head. You remembered to average out the velocity. We also went ahead and computed the problem to verify the chart and got a good solution. Over.

04 03 01 30

CMP

Roger.

04 03 01 33

CDR

Thank you very much.

04 03 01 35

CC

You're welcome.

04 03 01 40

CMP

Now if we can get our state vectors to agree, we'll be in business.

04 03 01 45

CC

No sweat.

04 03 19 38

CC

Apollo 8, Houston.

04 03 19 55

CC

Apollo 8, Houston.

(GOSS NET 1)

Tape 66
Page 4

04 03 19 59 CDR Go ahead.

04 03 20 01 CC Roger, Frank. Is Jim listening?

04 03 20 06 CMP Listening.

04 03 20 08 CC Roger. On your question about the option: PROGRAM 40 fits the preferred flag such that the next P52 will come up option 1, subsequent alignments after that come up option 2. Over.

04 03 20 27 CMP Roger. Understand. So 40 will have to come up with a TIG burn with an option 1 for us.

04 03 20 34 CC Roger. Now concerning your restart that happened in lunar orbit, for the peace of mind of the computer people and the MIT folks, we have a question. Did VERB 34 ENTER to a flashing VERB 51 in P22 cause your restart? Over.

04 03 20 56 CMP Yes. That sounds like it was it.

04 03 20 59 CC Roger. Thank you, Jim.

04 03 21 03 CMP That must be a "no, no".

04 03 21 08 CC Yes, Yes. That's a "no, no".

04 03 21 14 CMP That almost caused an unscheduled EVA, too.

04 03 22 29 CC Apollo 8, Houston. BIOMED switch center. Over.

04 03 22 49 CMP Three, two, one -

04 03 22 51 CMP MARK.

04 03 22 52 CC Roger. Your mark.

04 03 50 59 CC Apollo 8, Houston.

04 03 51 03 CDR Go ahead.

(GOSS NET 1)

Tape 66
Page 5

04 03 51 06 CC Apollo 8, this is Houston. It is about time for us to start keeping track of some command module RCS temperatures; so when you get a chance, we'd like the reading now, and we'll try to repeat it about every 8 hours or so.

04 03 51 22 CDR Okay. We'll get them for you right now.

04 03 51 24 CC Roger.

04 03 51 32 CDR You want the motor off the test meter, right?

04 03 51 37 CC That's affirmative.

04 03 51 48 CDR The 5C is pegged high.

04 03 51 55 CC Roger. 5C pegged high.

04 03 51 56 CDR 5D is pegged high.

04 03 51 58 CC Roger. D, high.

04 03 52 00 CDR So's 5D. 6A is high; 6B is high; 6C is 5 volts; 6D is pegged high.

04 03 52 27 CC Apollo 8, Houston. Roger. Understand. 5C and 5D are pegged high; 6A and 6D are pegged high; 6 Charlie is 5 volts; and 6 Delta pegged high. Over.

04 03 52 42 CDR That's Roger.

04 03 54 56 CC Apollo 8, Houston.

04 03 55 01 CDR Roger. Go ahead.

04 03 55 03 CC Apollo 8, Houston. We're showing quad A running a little bit warmer than the other quads. If you remember, I mentioned before that we were coming into a period of time here where we were going to

(GOSS NET 1)

Tape 66

Page 6

spend a lot of time with no PTC going. We'd like for you to try to favor quad A if you can in the shade, and do whatever you can to keep that temperature from getting out of hand. Over.

04 03 55 31 CDR Roger. I'm only reading 121 on quad A.

04 03 55 35 CC Roger.

04 03 55 44 CDR Quad C is the highest temperature we have; it's 142.

04 03 56 01 CC Roger, Frank. We are more interested in the tank temperatures than the quad temperatures. Over.

04 03 56 10 CDR Roger. I understand. Now listen, if you think it is that important, we'll just keep PTC-ing it and not even do anything.

04 03 56 17 CC Negative. There's no sweat right now. We're watching it, and we just wanted to let you know that this thing is being looked at. If we get anywhere near a situation where we feel we ought to change, we'll go back to PTC or cool it.

04 03 56 33 CDR Okay. Thank you. We'll do our best, but it is kind of hard, though. You are sort of subject of spatial geometry: wherever the stars and the moon happens to be, that's where you point.

04 03 56 44 CC Roger. We understand. We're going to keep an eye on it down here, and we'll keep you appraised.

04 03 56 52 CDR Thank you.

04 04 03 27 CC Apollo 8, Houston.

(GOSS NET 1)

Tape 66
Page 7

04 04 03 39

CDR

Go ahead, Houston. Apollo 8.

04 04 03 41

CC

Roger. Pass the word to Jim that on these marks that are coming up, pretty important that he remember to record his DELTA-R and DELTA-V and trunnion. We are working low bit rate down here, and so we're not going to be able to record that data from here. Over.

04 04 04 02

CDR

We are recording them all.

04 04 04 16

CDR

Houston, Apollo 8. Did you read that we are recording all the DELTA-R and DELTA-V and trunnion ...

04 04 04 21

CC

Roger, Frank. Thanks.

END OF TAPE

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

Tape 67

Page 1

04 04 13 56 CDR Jerry, Apollo 8.

04 04 13 59 CC Roger. Go ahead.

04 04 14 03 CDR As luck would have it, we got the sun almost directly ahead on top of us here.

04 04 14 10 CC Roger. We understand, but tank temperature is holding steady, so we are all right.

04 04 14 19 CDR Okay.

04 04 30 58 CC Apollo 8, Houston. Over.

04 04 31 02 CDR Go ahead, Houston. Apollo 8.

04 04 31 05 CC Roger, Frank. The helium tank temperature that we are watching on quad A has only gone up 1 degree in all this work that you are doing, so we don't consider it to be too terribly serious. What we would like to do, as soon as you finish this P23 work, is rather than go back into PTC, let's just roll her over 180 degrees and put quad A on the cool side, and hold it that way until your next activity comes up, which is around 102:30. Over.

04 04 31 41 CDR Okay. Fine.

04 04 41 47 CDR Okay, Jerry. We're through with PROGRAM 23. We're just going to roll here to get the sun off quad A, if that's what you want.

04 04 41 55 CC Roger, Frank. Good deal.

04 04 50 21 CDR It should be getting cool now, Jerry.

(GOSS NET 1)

Tape 67
Page 2

04 04 50 26 CC Roger, Frank. So far we haven't seen the temperature start back down again. We expect to see it, though.

04 04 51 25 CDR Houston, Apollo 8.

04 04 51 27 CC Apollo 8, Houston. Go.

04 04 51 31 CDR Roger. Give us the word if you want us to maneuver back here before that time that you ..., please.

04 04 51 38 CC Wilco.

04 04 51 41 CDR Thank you.

04 04 53 48 CC Apollo 8, Houston.

04 04 53 52 CDR Go ahead, Houston.

04 04 53 54 CC Roger, Frank. We have some data that was missed on your P23. We'd like you to read it down to us if you have time.

04 04 54 04 CDR Roger. We will in just a minute.

04 04 54 06 CC Roger.

04 04 54 13 CDR Go ahead. What do you want?

04 04 54 15 CC Roger. On star number 2, the sixth mark, we missed DELTA-R and DELTA-V.

04 04 54 25 CDR Sixth mark, that's - did Lovell tell you to do this? Come on, Carr; come clean. Did he ask you to ask for this?

04 04 50 43 CC Who?

04 04 50 46 CDR Jim Lovell.

04 04 50 48 CC Negative. Uh-uh. We really missed it.

04 04 50 53 CDR It's all zeros, and all zeros.

312